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EXAMINER				
AFOLAB, MARK O				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/505,445

Applicant(s)

SIMONIS, HELMUT MATTHIAS

Examiner

MARK O. AFOLABI

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This communication is considered fully responsive to the Application No. 10/505,445 filed on 06/20/2005. The amendment presented on 21 January 2009, which provides change to the abstract objections is hereby acknowledged. Furthermore, claim 14 has been cancelled, claims 1, 4, 15 and 18 were amended and claims 1-13 and 15-18 remain pending and have been examined.

Information Disclosure Statement

2. Applicant is respectfully reminded of the Duty to disclose 37 C.F.R. 1.56 all pertinent information and material pertaining to the patentability of applicant's claimed invention, by continuing to submitting in a timely manner PT0-1449, Information Disclosure Statement (IDS) with the filing of applicant's of application or thereafter.

Specification

3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Appropriate correction is required.

Specification Objections

4. Acknowledge is made to applicant's response to previously raised objection to the abstract presented on 21 January 2009, which provides change to the abstract is noted and is now in complies with MPEP 608.01(b). All prior objections to the abstract are hereby **withdrawn**.

Claim Objections

5. Acknowledge is made to applicant's response to previously raised objection to claims 1, 4 and 15 presented on 21 January 2009. All prior objections regarding these claims are hereby **withdrawn**.

Double Patenting

6. Acknowledge is made to applicant's response to previously raised nonstatutory double patent rejection to claims 1, 12, 15 and 16-18 presented on 21 January 2009. The terminal disclaimer filed on 21 January 2009 is noted and is now in compliance with 37 CFR 1.321© or 1.321(d). All prior rejections regarding these claims 1, 12, 15 and 16-18 are hereby **withdrawn**.

Claim Rejections – 35 USC § 101

7. Acknowledge is made to applicant's response to previously raised 35 USC § 101 rejection to claim 18 presented on 21 January 2009. The amendment to claim 18 is noted and all prior rejection to comply with 35 USC § 101 is hereby **withdrawn**.

Response to Arguments

8. Applicant's arguments filed on 21 January 2009 with respect to claims 1-13 and 15-18 have been fully considered but are not persuasive for the following reasons:

Applicant argues that claims 1, 8 and 15 contain limitations not taught by the reference, MacIsaac (U.S. 2004/0257999 A1).

Specifically, applicant argues that Mac Isaac **does not obtain network data relating to the network topology and network behavior**, applicant stated that MacIsaac simply looks at traffic received at the detection device to determine if packet flooding occurs, examiner strongly disagrees.

In response to applicant's argument that the reference fail to show this limitation. **"obtain network data relating to the network topology..."** was broadly interpreted as "Detection device 5 has a first communication link 6 connected to client computer 4 and a second communication link 7 connected to some other networked device in the network 1. In the illustrated embodiment, detection device 5 receives all packets arriving on first link 6 and transmits these packets out the second link 7 and onto the rest of network 1", [0040] and **Fig.1 is a network topology) and network behavior can be argued to be**"a connection to the network for receiving data traffic, a computer connected to the connection for analyzing the data traffic and analysis means associated with the computer for *obtaining characteristics of the data traffic*", [0018] and [0090]). Hence, meet this limitation. Again, MacIsaac "looking at the traffic received" can be argued as "obtaining the network data". Due to citation of **MPEP 2111** that, **"CLAIMS MUST BE GIVEN THEIR BROADEST REASONABLE INTERPRETATION**. During patent examination, the pending claims must be,"given their broadest reasonable interpretation consistent with the specification." >The Federal Circuit's en banc decision in Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005).

Furthermore in respect to MacIsaac do not disclose **estimating the effect of a modification of the communications network or its behaviour by calculating traffic information between a selected first node and a selected second node of the network using the input data**. Examiner strongly disagrees.

It can be broadly argued that **"estimating the effect of a modification of the communications network or its behaviour"**, a characteristic of traffic on networks [i.e., its behavior] in which devices exchange data by establishing protocol connections with one another ([i.e., between first node and selected second node, [0040]] is that packets are transmitted in bursts onto the network. Measurements of the patterns of these bursts of packets have shown them to be fractal or self-similar in nature... For example, if a large burst of packets is observed between time t and time $t+1$, [i.e., intervals in communication network or estimating traffic values] and if 100 sub-samples are extracted over this interval [i.e., modification of network] a similar pattern of packet bursts within each of the sub-samples would be seen, [0036]) **by calculating traffic information between a selected first node and a selected second node of the network using the input data (e.g.,** Sampling the network traffic comprises maintaining certain statistical information about the network traffic. When a sample of network traffic has been collected, method 20 uses the compiled statistical information [i.e., calculation of traffic] to estimate a measure of the burstiness of the network traffic (block 31). This estimation may comprise computing an estimated Hurst parameter for the network traffic, [0046]. In light of the above rejection, it is pertinent to note that according to MPEP 2111 which states, "CLAIMS MUST BE GIVEN THEIR BROADEST REASONABLE INTERPRETATION". During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." >The Federal Circuit's en banc decision in Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969)."

Applicant further argues that reference does not disclose **"estimate the effect of a modification of the network, there is no selecting a candidate for modifying the network"**, as required by claims 9-11.

First, the examiner maintains the rejection of claims 9-11, that the art meets the claimed limitations.

Second, it appears that the applicant is essentially arguing definitions or semantics. Meaning, the applicant wants the terms **"estimate the effect of a modification of the network"** and **"selecting a candidate for modifying the network"** to receive a more narrow interpretation than allowed by case law. It is noted that MPEP 2111 states: "CLAIMS MUST BE GIVEN THEIR BROADEST REASONABLE INTERPRETATION". During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." >The Federal Circuit's en banc decision in Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005).

Third, applicant's invention is toward the field of optimization. In this field, optimizing a problem gives a set of solutions where an optimal solution based on either maximizing or minimizing a function can be selected.

In this case, MacIsaac estimates the behavior of the network by estimating a measure of the burstiness of the network traffic [0046] and thereby making a cost effective solution [0087]. It can be broadly interpreted that a costly effective solution will be selected from many candidates for modifying the network. Hence, this limitation is met.

Regarding claims 6, 12 and 13, the examiner maintains the rejections of claims 6, 12 and 13, as seen bellow, and maintains that the combination of applied art meets the claimed limitations.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Regarding rejected claims 1-5, 11 and 15-17 under 35 U.S.C § 102 (e) as being anticipated by Gary MacIsaac (U.S. 2004/0257999 A1) (Hereinafter MacIsaac).

Regarding claim 1, a method of estimating traffic values or intervals in a communications network, the network comprising a plurality of nodes being interconnected by links [routers, connected by data link, 0033], the method comprising the steps of

(a) obtaining traffic data (e.g., receives all packets) through said nodes or links as input data (e.g., [0040] and data traffic associated with messages being sent from an originating node to a destination node, 0018];

(b) obtaining network data relating to the network topology (i.e., Fig. 1, 'Network-Includes data links connecting a number of network devices such as routers, bridges, multi-port bridges, switches, hubs, etc') and network behavior (e.g., a connection to the network for receiving data traffic, a computer connected to the

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connection for analyzing the data traffic and analysis means associated with the computer for obtaining characteristics of the data traffic, [0018] and [0090]); and

(c) estimating the effect of a modification of said communications network or its behavior (e.g., communication link, 0040 and 0077) by calculating traffic information (e.g., statistical information about the network traffic, 0046) between a selected first (e.g., first link, [0040]) and a selected second node (e.g., second link, [0040]) of said network using said input data [0046].

Regarding claim 2, wherein said traffic information is a cumulated traffic [0069]

Regarding claim 3, wherein said input traffic data are measurements [i.e., parameter] of traffic data obtained from said network [0047].

Regarding claim 4, wherein said modification of said network or network behaviour comprises one or more of: a modification [e.g., disable link, 0077] of the network topology, a modified routing algorithm parameter, a modified traffic engineering constraint and/or a modified traffic load [0076 - 0081].

Regarding claim 5, comprising the step of correcting said input traffic data if inconsistencies are detected (e.g., value ... corrected to include all data in link 6 by adding to the value, [0067]).

Regarding claim 7, comprising evaluating the impact of the network or network behaviour modification from the calculated traffic information [0076].

Regarding claim 8, repeating step (c) for different pairs (e.g., establishing ... connections with one another, 0036)) of said first and second nodes

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(e.g., first and second link, [0040]) corresponding to different modifications [0040 and 0045].

Regarding claim 9, comprising the step of selecting (e.g., method 20, comprise a number of steps, 0045), according to predefined criteria [i.e., instruction, 0045], one or more candidates for modifying said communications network corresponding to one or more of said modifications [0045 and Fig. 4].

Regarding claim 10, comprising the step of calculating a detailed analysis of traffic values or traffic intervals for one or more of the selected candidates [0046].

Regarding claim 11, wherein said traffic values or intervals are calculating using a traffic flow model being based on [0046]

- (a) traffic data measurements through said nodes and links as input data [0040 and 0046]; and
- (b) a plurality of constraints (e.g., "imposing a packet filtering rule", [0046]) describing network topology and behaviour [0076].

Regarding claim 15, comprises a method of modifying a communications network, which is substantially the same steps discussed by each respective step in the method of claim 1, thereby same rationale of rejection is applicable

Regarding claim 16, this claim comprises an apparatus for calculating traffic values in a communications network, which is substantially the same steps discussed by each respective step in the method of claim 1, thereby same rationale of rejection is applicable

Regarding claim 17, this claim comprises a network management system for managing a network, which is substantially the same steps discussed by each

respective step in the method of claim 1, thereby same rationale of rejection is applicable

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 6, 12, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gary MacIsaac (US 2004/0257999 A1) (hereafter MacIsaac) in view of Fielscher et. al. (US 2003/0058798 A1) (hereafter Fielscher).

Regarding claim 6, wherein said traffic information is calculated using linear constraints in a traffic flow model.

MacIsaac teaches a method of estimating traffic values or intervals in a communications network, the network comprising a plurality of nodes being interconnected by links [routers, connected by data link, 0033], obtaining traffic data through said nodes and/or links as input data [0040], obtaining network data relating to the network topology and network behavior [0090] and estimating the effect of a modification of said communications network and/or its behavior [communication link, 0040 and 0077] by calculating traffic information [statistical information about the network traffic, 0046].

But, **MacIsaac does not explicitly teach** traffic information is been calculated using linear constraints.

However, **Fielscher teaches** network traffic information is calculated using linear constraints in a traffic flow model [linear program [constraint] may be used to model how to route traffic in the Internet] [0052].

It would have been obvious to one of ordinary skill in the art at the time invention was made, given the suggestions of **MacIsaac and Fielscher** to use linear constraints in calculating network traffic information in a traffic flow model.

One would be motivated to utilize optimization statistical tool, such as linear constraints in calculating network traffic information in any end to end network communication system.

Regarding claim 12, a method of calculating traffic values or intervals in a communications network, the communications network comprising a plurality of nodes, the nodes being connected to one another by links [routers, connected by data link, 0033], the method comprising:

calculating the cumulated traffic flow between a first and a second of said nodes in a traffic flow model using linear constraints;

said traffic flow model being based on

- (a) traffic data measurements through said nodes and links as input data; and
- (b) a plurality of constraints describing the network topology and behaviour.

MacIsaac teaches a method of calculating traffic values or intervals in a communications network, the network comprising a plurality of nodes being interconnected by links [routers, connected by data link, 0033], calculating the cumulated traffic flow between a first and a second of said nodes in a traffic flow model [0046], traffic data measurements through said nodes and links as input data [0040 and 0046]; and a plurality of constraints describing the network topology and behaviour [0076].

But, MacIsaac does not explicitly teach traffic information is been calculated using linear constraints.

However, Fielscher teaches network traffic information is calculated using linear constraints in a traffic flow model [linear program [constraint] may be used to model how to route traffic in the Internet] [0052].

Thus, it would have been recognized by one of ordinary skill in the art to modify MacIsaac teaching of calculating traffic values or intervals in a communications network, with Fielscher's technique, it would have yielded predictable results and resulted in an improved system, namely, a system that would calculate cumulated traffic flow using linear constraints technique to obtain a provably good solution to this linear program utilizing e-approximation methods proven to be computationally effective in practice [0048].

Regarding claim 13, comprising the step of correcting said input data if inconsistencies are detected [0067, MacIsaac].

Regarding claim 18, this claim comprises a computer readable storage medium program for performing the method which is substantially the same steps discussed by each respective step in the method of claim 1, thereby same rationale of rejection is applicable, except for code for obtaining traffic data (e.g., the computer system-readable code means is operable, in conjunction with a device such as network controller 160, to carry out all or some of the steps, [0044], Fielscher) for automatically selecting (e.g., [0024], Fielscher) promising candidate (e.g., routing a demand through the network for the selected commodity, claim 8, Fielscher) for a network modification by calculating a cumulated flow using traffic and network data (e.g., statistical information about the network traffic, [0046], MacIsaac), wherein the candidates are selected (e.g., first link [i.e., primary] and second link [i.e., second], [0040], MacIsaac) according to predefined selection criteria (e.g., initializing primary and

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second flows for each link to at least one predetermined value, claim 8 and claim 20, Fielscher).

Claim Interpretation

16. The claims and only the claims form the metes and bounds of the invention. "Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997) . Moreover, limitations appearing in the specification but not recited in the claim are not read into the claim. In re Prater, 415 F.2d, 1393, 1404-05, 162 USPQ 541,550-551 (CCPA 1969)" (MPEP p 2100-8, c 2,145-48; p 2100-9, c 1,1 1-4).

17. The Examiner has full latitude to interpret each claim in the broadest reasonable sense. The Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

EXAMINER'S NOTE

Examiner has cited particular columns and line numbers or paragraph numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. The entire reference is considered to provide disclosure relating to the claimed invention.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Conclusion

14. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK O. AFOLABI whose telephone number is (571) 270-5627. The examiner can normally be reached on Monday-Friday between (8:00 am to 5:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M.O.A/

MARK O. AFOLABI

Examiner AU 2454

/Nathan J. Flynn/

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